currently available for use in myelography. Studies show that these agents have less hemodynamic, cardiovascular, neurologic, hematologic and renal toxicity and produce fewer unpleasant side effects than currently used ionic agents. They also produce higher urinary iodine concentrations and less diuresis. Whether these agents will reduce the number of serious and fatal contrast reactions in patients having urography is uncertain. When these agents become commercially available, they will probably cost four to ten times more than the currently available agents.

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Treatment of Cancer of the Prostate

TOTAL PROSTATECTOMY continues to offer the best disease-free and overall survival in patients with localized prostatic cancer. Patients who undergo total prostatectomy have a significant risk of erectile impotence when a standard radical prostatectomy is done. Those patients who value the capacity for continued sexual activity have been satisfied with a penile prosthesis because the sensation of orgasm is usually intact. In a recent study, Walsh and co-workers suggested modifications during radical retropubic prostatectomy to preserve the pelvic plexus nerves responsible for erections. There is legitimate concern, however, that the less extensive surgical margins and additional dissection required to preserve these nerves might compromise the extent of the operation necessary to remove the cancer.

New concepts and drugs are emerging for treating cases of metastatic prostate cancer. Currently, orchiectomy and diethylstilbestrol are the most commonly used forms of hormonal therapy for managing patients with prostatic cancer. Some patients find the thought of orchiectomy disagreeable, and the use of estrogens is associated with fluid retention and an increased incidence of cardiovascular disease that appears to be dosage related. Luteinizing-hormone-releasing hormones (LH-RH), which appear to obviate these problems, have been synthesized. These drugs actually stimulate testosterone production when initially given; however, ongoing administration has the paradoxic effect of inhibiting pituitary release of luteinizing hormone (and follicle-stimulating hormone), resulting in a fall in serum testosterone to castration levels within two to four weeks. About 50% to 75% of patients have vasomotor hot flashes and most note significantly diminished libido and erectile impotence. Because of the absence of potentially life-threatening side effects sometimes associated with oral estrogen therapy, these compounds might be attractive substitutes.

Antiandrogens have also been evaluated in cases of metastatic prostatic cancer. They may offer an advantage over conventional hormonal therapy in that potency appears to be preserved in most patients. In an effort to prevent disease flare associated with the initial administration of LH-RH, Labrie and colleagues use an antiandrogen at the time of initiating therapy. This combined form of treatment results in "total castration"—that is, it eliminates the effect of any circulating adrenal androgens. A prospective randomized trial to determine whether this combination therapy offers any advantage over conventional therapy is currently being carried out as an intergroup study by several oncology study groups.

The use of chemotherapy for prostate cancer has been studied extensively by the National Prostatic Cancer Project. It is now felt that prostate cancer is heterogeneous and composed of cells that are both sensitive and insensitive to hormones. Hormone "failure" occurs when the hormone-insensitive cells become the predominant cells present. The goal has been to identify single agents and combinations that might prove effective against the hormone-insensitive cell population. The more active single agents that have been identified in randomized trials include methotrexate, cyclophosphamide, cisplatin and estramustine. Trials in which the use of single agents has been compared with that of two- and three-drug combinations have failed to show a statistical advantage of the use of combinations. A variety of combinations have been used, most of which include some sequence of cyclophosphamide, 5-fluorouracil, doxorubicin (adriamycin) hydrochloride, mitomycin, cisplatin or estramustine.

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Section Editor's Comment:

External beam x-irradiation and interstitial irradiation are other areas of treatment to be considered in appropriate cases.

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New Uses of Lasers in Urology

THE NEODYMIUM-YTTRIUM-ALUMINUM-GARNET (Nd-YAG), carbon dioxide and argon lasers are now being used for urologic operations. The use of the Nd-YAG laser in the treatment of bladder cancer has offered some unique advantages. The work of Hofstetter in Germany in the late 70s showed a greatly decreased recurrence rate in patients with T_1 and T_2 lesions of the bladder. His 20% recurrence rate in more than 600 patients treated has now been duplicated with a small series by both ourselves and Malloy and co-workers at the University of Pennsylvania.

Other advantages to patients have been a decreased stay in the hospital (generally, the procedure can be done on an outpatient basis or with a one-night stay), usually avoidance of the need for a catheter, ease of treatment of tumors in areas of the bladder not easily accessible with a resectoscope and avoidance of obturator reflex complications. Many patients with carcinoma of the penis, erythroplasia of Queyrat or giant condylomata of Buschke can now also be treated with the YAG laser, avoiding penile amputation. The treatment of small condylomata can be attained with either the CO_2 or YAG laser, but in patients with extremely large, bulky condylomata, the YAG laser has offered a new dimension of treat-

ment that has not been available in the past with conventional means of therapy.

The YAG laser has also been used to treat patients with interstitial cystitis and urethral stricture disease. Patients with interstitial cystitis have shown some promising results, especially those who have been refractive to all other conventional means of therapy. Unfortunately, the treatment of strictures has been the least rewarding of all of the new laser applications due to the relatively high recurrence rate seen by both Smith and ourselves.

A new field that is rapidly developing is the use of dye sensitizers such as hematoporphyrin derivative, which are concentrated in tumor cells and then, when exposed to an argon laser, cause necrosis of the tumor cells. This technique has been used with superficial skin lesions from breast carcinoma or melanoma but more recently has been used in the bladder for treating patients who have carcinoma of the bladder.

As the technology continues to improve, lasers will offer urologists in the 1980s more and exciting applications.

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Section Editor's Comment:

Endoscopic laser operation is still investigative in nature and we are eagerly waiting to learn of its full benefits and disadvantages.

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Cancer of Testis Curable

SURVIVAL PATTERNS in patients with nonseminomatous germ cell cancer of the testis have shown dramatic improvement in worldwide experience. Management changes in the past seven years have underscored the impact of more effective chemotherapeutic agents along with operative intervention. Using judicious selection of retroperitoneal node dissection and chemotherapy with cisplatin, bleomycin sulfate and vinblastine sulfate, stage B disease is virtually 100% curable. In addition, advanced or relapsed disease responds to salvage chemotherapy with more than 80% survival rates when cytoreductive operations are grossly complete and with 40% survival rates when persistent carcinoma remains.

High inguinal orchiectomy is the universal choice for initial treatment of a testicular tumor. When nonseminomatous tumor is diagnosed, clinical staging includes a computed tomographic scan of chest; mediastinum, abdomen and pelvis for detecting metastasis. Blood tests include determining α-fetoprotein and β-subunit human chorionic gonadotropin serum levels. If staging rules out extensive nodal involvement or widespread metastasis, retroperitoneal lymph node dissection may follow. If all markers are negative for tumor, some centers offer chemotherapy and surveillance alone without doing retroperitoneal lymph node dissection (Figure 1).

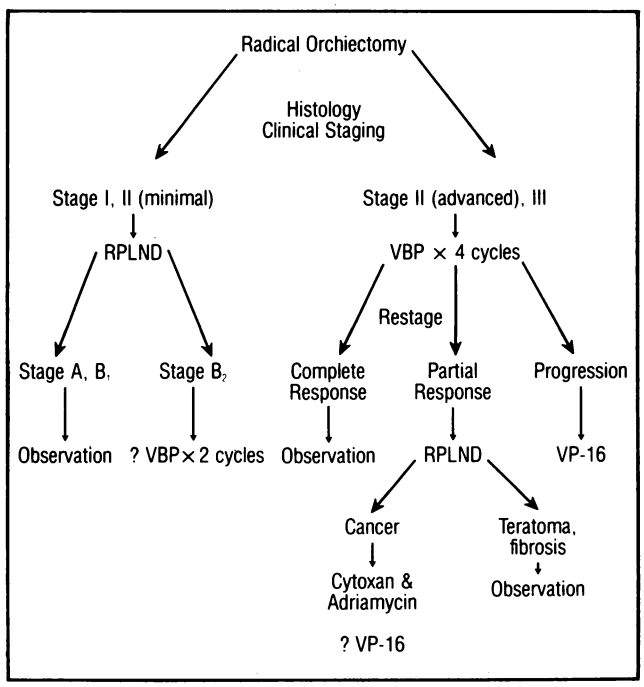

Figure 1.—Recommended plan of treatment for patients with nonseminomatous testicular cancer. RPLND = thoracicoabdominal retroperitoneal lymph node dissection; VBP = vinblastine sulfate, bleomycin sulfate and cisplatin; VP-16 = etoposide (VP-16-213)

When no (stage A) or minimal (stage B) tumor deposits are found, close observation with salvage chemotherapy of recurrences (less than 10%) is appropriate. Virtually all such patients with recurrence will respond. When extensive nodal involvement in the abdomen (stage B3) or mediastinum is present or when widely metastatic tumor (stage C) is found, triple-agent chemotherapy is initiated. Patients who respond but who still have residual lesions are subjected to surgical intervention (retroperitoneal lymph node dissection). Patients showing progression may receive adjunctive chemotherapy using other agents such as etoposide (VP-16-213). Combined patient management by a urologist and an oncologist is recommended.

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Needle Urethral-Vesical Suspensions for Stress Incontinence

SINCE PEREYRA first described the needle urethral-vesical suspension procedure for stress incontinence, modifications have provided urologists with a procedure that has a 90% or greater success rate. It eliminates the need for an open pelvic operation through a substantial abdominal incision with splitting of the abdominal wall fascia; it significantly reduces operative time and intraoperative blood loss; it significantly decreases postoperative pain and duration of hospital stay, and it allows repair of an associated cystocele, enterocele or rectocele through the same approach.